PLACENTA PRÆVIA,

OR

UNAVOIDABLE HÆMORRHAGE.

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PLACENTA PRÆVIA, OR UNAVOIDABLE HÆMORRHAGE.

THERE is no complication in midwifery more to be dreaded by the accoucheur than placenta prævia, from the danger attending it both to the mother and child. It has, in consequence, attracted much attention from all the most eminent authorities in midwifery from an early period; yet there is still much to learn and to decide in regard to its symptoms, locality, cause, and treatment.

The older authors considered that its most characteristic symptom was hæmorrhage. Guillemeau, who wrote in 1609, stated that the hæmorrhage proceeding from it was so dangerous that nature was unable to suppress it.

Mauriceau, the most celebrated authority, states that when the placenta presents, the blood flows in abundance from the womb with many clots, and the woman faints from weakness. Therefore, as soon as the surgeon ascertains the nature of the case, he should immediately deliver the woman if he wishes to save her life and that of her child.[1]

Amand reports several interesting cases which illustrate the excessive flooding attending this complication. In the case of a woman aged 49, in the eighth month of pregnancy, the hæmorrhage was so great that she fainted several times, and when Amand arrived, she was thought to be dead.[2] On examination, he found the placenta presenting, and that it was entirely detached. He delivered the child; but it was dead. In another case the hæmorrhage was checked by means of venesection, astringents, and the use of ice. In a third case, the placenta was entirely detached, and hanging between the thighs of the mother. The child was dead; but the delivery was easy, and the mother did well.

La Motte states, of all the accidents which can occur during labour there is none more perilous than that in which the placenta presents before the child, because it is accompanied by such violent loss of blood that it is impossible for the woman to escape death, unless she is promptly and skilfully assisted.[3]

[1] *Des accouchemens*, p. 328.
[2] *Nouvelles observations sur la pratique des accouchemens*, pp. 317, 318.
[3] *Traite des accouchemens*, p. 330.

Deventer considered that the sign of placenta prævia was the flooding that accompanied it, sometimes in such abundance as to place the mother and child in imminent danger.[1]

Roederer seems to have been fully aware of the nature of placenta prævia, and clearly describes its symptoms and consequences. Having made some preliminary remarks regarding the various causes of hæmorrhage, he states that the most frequent is placenta prævia (placenta oblata). When this takes place, it is characterized by the following symptoms as labour approaches: hæmorrhage coming on suddenly without any apparent cause; in small streams at first, which soon ceases. It returns again, however, in larger quantity, flowing for a longer space, with little interval. When labour pains come on, it flows in a continued stream, accompanied with clots; and unless sufficient aid is had recourse to, it proves fatal to the mother, the presage of which is the gradual weakening of the pains, which ultimately cease entirely, extreme chilliness, dimness of sight, feeble intermittent pulse, syncope, oppression of the chest, cold perspirations, and nervousness. Some women die in convulsions; others sink from debility.[2]

Portal reports six cases of placenta prævia which were characterized by excessive floodings; two of which were rendered still more interesting and remarkable by the children being born alive after the artificial separation of the placenta. One of the children was asphyxiated when born, and in order to revive it, he informs us that he had it placed before the fire, and the placenta, which was still attached to it, put in a pan with wine, and kept warm over the fire; he also spouted some of the best wine into its eyes, nose, ears, and other parts of the face. It was then wrapped up all over in clothes dipped in warm wine, which was changed so soon as they became cool. Bruised onions were held to its nose and mouth, by which means it revived and did very well, as well as the mother.[3]

Levret states that when the placenta is attached to the superior part of the cervix uteri, the woman cannot escape having hæmorrhage towards the end of pregnancy; and that the flooding increases with the pains, and is more considerable according to their frequency and acuteness.[4]

Puzos treats of hæmorrhage in a very cursory manner, although he seems to have been fully aware of its great danger. In treating of preternatural labour, he places it in the first rank of complications; but he does not distinguish accidental from unavoidable. He merely states, that of the causes of preternatural labour the most dangerous is that which is preceded or accompanied by such a loss of blood as places the mother and child in great danger, although the presentation is quite natural. When the hæmorrhage

[1] *Observations important sur le manuel des accouchemens*, p. 180.
[2] *Elementia Artis Obstetricæ*, p. 316.
[3] *Compleat Practise of Men and Women Medivives*, Trans. from the original, pp. 166-214.
[4] *L'art des accouchemens*, p. 364.

is moderate, and there is disposition in the pains to dilate the os uteri, all that is required is to recommend the patient to keep her bed and not to exert herself; but if the discharge is more violent, which is the case when the placenta is separated either entirely or partially, in such a case, the delivery should not be delayed longer than to admit of the performance of religious duties, and in order to allow a diagnosis to be formed. The necessity of delivery is obvious, for without it the death of the mother and child is certain.[1]

Leroux, in his interesting observations on hæmorrhage in general, reports some remarkable cases of placenta prævia in which the discharge of blood was excessive. He fully understood the nature of the complication, and he adopted the most approved mode of treatment with complete success, so far as the mother was concerned. In one case, the hæmorrhage was so great that he was afraid the woman would die before he could deliver her. According to custom, having induced her to confess, he proceeded to turn the child, which presented with the face. He searched for the place where the placenta was separated, and pierced the membranes, and easily introduced his hand and turned. In another case, the hæmorrhage continued for fifteen days, and reduced the woman to great weakness. The peculiarity of this case was the difficulty of removing the placenta after the delivery of the child, in consequence of the os uteri being contracted round it.[2]

M. Boivin, who was considered a high authority, states that when the placenta presents before the child at the passage, it always causes excessive loss of blood, which is liable to prove fatal both to mother and child; therefore it ought to be remedied by immediate delivery.[3]

These references seem sufficient not only to prove the frequency of hæmorrhage in placenta prævia, but to justify the opinion that it was a characteristic symptom of that complication. It is remarkable, however, that while placenta prævia had attracted so much attention, and was so thoroughly understood on the Continent, it was apparently little known in this country previous to the publication of Dr Rigby's valuable treatise on uterine hæmorrhage, in which he clearly described its nature, and pointed out that there were two distinct forms: the one he designated "accidental," the other "unavoidable" hæmorrhage. He considered that "there is no particular part of the uterus to which nature seems constantly and uniformly to fix the placenta; it is, nevertheless, for the most part, so situated, that if the woman be healthy, and no accident befall her, it does not separate until the full term of pregnancy,—nor then, before the entire separation of the child; after which it becomes disengaged from the uterus, and is

[1] *Des accouchemens*, p. 167.
[2] *Observations sur les perte de sang*, p. 100.
[3] *Mémoire de l'art des accouchemens*, p. 363.

thrown off, making room for its contraction, which, shutting up the mouths of the vessels, effectually prevents any considerable loss of blood; for which purpose it is plain it must be fixed to some part of the womb which does not dilate during labour, namely, the fundus, or sides of it. In this case, when flooding comes on before delivery of the child, it is obvious that the separation of the placenta must be owing to violence done to the uterus by blows or falls, to some peculiar laxity of the uterine vessels from badness of habit, or fever, or some influence of the passions of the mind suddenly excited, such as fear, anger, etc.," thus producing "accidental" hæmorrhage. "But, from the uncertainty with which nature fixes the placenta to the uterus, it may happen to be so situated that when the full term of pregnancy is arrived, and labour begins, a flooding necessarily accompanies it without any of the above accidental circumstances, that is, when it is fixed to that part of the womb which dilates as labour advances, namely, the 'collum' and 'os uteri,' in which case it is very certain that the placenta cannot, as before described, remain secure till the expulsion of the child, but must of necessity be separated from it in proportion as the uterus opens, and by that means an hæmorrhage must be unavoidable."[1]

The principles here laid down, and the designations assigned to the different forms of hæmorrhage, have been adopted by nearly every accoucheur of experience since they were published. There are some recent writers, however, who not only deny that hæmorrhage is unavoidable, but question the anatomy and physiology on which it was supposed to depend.

Cazeau asserts that "although a hæmorrhage is usually considered to be inevitable under the circumstances (placenta prævia), yet it may not appear even during labour, and the dilatation of the os uteri may be effected without the loss of a drop of blood."[2]

Barnes supports this assertion in rather a grandiloquent style, in which he impersonates nature in a remarkable manner. After a digression on the treatment of fever, which has no connexion whatever with the subject under consideration, he compares it with the principles of treatment of placenta prævia; he then proceeds to say, "Nature declares, and pronounces emphatically, that the hæmorrhage is not in all cases unavoidable, and progresses in proportion to the dilation of the mouth of the womb. She protests against the assumption that in this great emergency she is altogether at fault, and powerless to arrest flooding. Let not those who never had the courage to trust her, the patience to observe her, or the skill to interpret her, too confidently deny her power."[3] After such a passage as this, we naturally expect some convincing evidence in support of it; but in place of that, he quotes a case, which is imperfectly reported, by the late Dr James

[1] *An Essay on the Uterine Hæmorrhage*, pp. 13, 15, 16.
[2] *A Theoretical and Practical Treatise on Midwifery*, p. 757.
[3] *The Physiology and Treatment of Placenta Prævia*, p. 40.

Reid, who "was sent for by a midwife to a woman, who, at the full time, had been seized the previous evening with labour pains, which gradually increased in strength through the night, and continued till *one* P.M.; at the time the os uteri was fully dilated and the membranes ruptured, a much larger quantity than usual of liquor amnii escaped.

"By the account I received, it appeared a fortnight previous the patient had hurt herself by a strain whilst washing, and that since that period she had not felt any movement of the child, a severe pain remaining in the right iliac region. The midwife could not discover any presentation, through the membranes, during the expansion of the os uteri, and was much astonished, on their being ruptured, that she was unable to do so. The only substance she could feel was a soft mass close to the os uteri. [Concluding it to be placental presentation, she sent for Dr Reid. To his surprise, as there had been no hæmorrhage, Dr Reid found this conclusion correct.] I found the os uteri fully dilated, and the placenta attached firmly to the pubic and lateral portions, so as to prevent effectually my finger from advancing in these directions. Forcing pains came on during this investigation, they having been trivial all the afternoon. I introduced my hand into the uterus towards its posterior part (a proceeding unattended by any difficulty), and found the hollow of the sacrum unoccupied; advancing the hand still higher above the promontory, I could at length distinguish the child's head strongly encircled by the upper part of the uterus. A foot was seized, and delivery effected. The child was of moderate size, had evidently been dead some time, as the cuticle was desquamating, and the abdomen tense and inflated with air. The placenta was readily brought away soon after."[1]

Dr Barnes adds that the above case proves a position I have put forward, namely, that the hæmorrhage in placenta prævia is not "*unavoidable.*"

It must be obvious, however, to every unbiassed observer, that it gives no support whatever to this position. It was clearly an example of anterior or "lateral presentation of the placenta," which this author informs us is not, unless under very exceptional circumstances, liable to detachment, or to lead to floodings before the birth of the child.[2] There was no flooding in this case, because there was no detachment of the placenta.

Other authors have denied the fact that hæmorrhage is inevitable in placenta prævia, but Dr Matthews Duncan is the most recent who has done so; but obviously upon equally questionable grounds. He says:—"This accident (hæmorrhage) is common, but many cases of placenta prævia of all kinds do not present it." Therefore, he further states his "theory, as explained in the preceding pages, is that the hæmorrhages during pregnancy are accidental, not necessary, and this occurrence is favoured by the extraordinary anatomical conditions existing in placenta prævia, as well as by other circum-

[1] *Op. cit.*, p. 115. [2] *Op. cit.*, p. 63.

stances, some of which are known, as the increased pressure of blood above what it would be were the placenta inserted high on the uterine wall." [1]

This very obscure passage proves nothing. There is no evidence that there is greater pressure of blood in placenta prævia than when that organ is situated high on the uterine walls. Before denying or attempting to overturn a fact so generally admitted by all accoucheurs of experience and observation, as that hæmorrhage is unavoidable in placenta prævia, these authors would have done well had they brought forward something more than mere assertion or imperfectly-observed cases in support of their hypothesis or "theory," as Dr Duncan calls it. Were this opinion admitted as a fact, and the suggestion of leaving the case to nature, after partially separating the placenta, acted upon, the results would be hazardous, if not fatal, both to mother and child.

Locality.—The situation of the placenta, which leads to unavoidable hæmorrhage, is a subject of deep interest, and although the idea entertained by the older authors in regard to it was most erroneous, that of many of the accoucheurs of the present day, notwithstanding their more extended advantages, is in many instances most erroneous and unsatisfactory. Under the impression that the fundus was more supplied with blood for the nourishment of the fœtus and for the secretion of the catamenia, the older authors supposed that the placenta was always attached to it; and when found at the os uteri, that it must have been separated from its original attachment by some accident, such as a blow or fall, or some other injury.[2] Levret[3] was the first to point out this error; and remarked that when the placenta was once attached to the fundus it was impossible for it to slip down by its own weight to the orifice of the womb, in consequence of the continued tendency of the uterine walls to contract and the reaction of the uterus contained within the membranes. Some authors of the present day go to the opposite extreme from the ancients, and imagine that the placenta is sometimes attached to the cervix uteri. Even Dr Rigby seems to entertain this idea, as he says that when the placenta is fixed to that part of the womb which dilates as labour advances, namely, the "collum and os uteri, an hæmorrhage must unavoidably be produced." Dr Lee[4] frequently refers to the placenta being felt adhering to the neck of the uterus. Cazeau, in enumerating the different localities of the placenta, says, "finally, we have the term intro-cervical insertion."[5] Barnes not only asserts that the placenta is situated on the cervix, but he gives a diagram illustrating what he calls the seat of the "cervico-orificial placenta." Many other authors might be cited as holding the same opinion, for it is very general, but I consider that those

[1] *Mechanism of Natural and Morbid Parturition*, p. 305.
[2] Mauriceau, *op. cit.*, p. 155.
[3] *Op. cit.*, p. 348.
[4] *Clinical Midwifery*, pp. 142, 144, 145, 152.
[5] *Op. cit.*, p. 755.

I have quoted are sufficient to show the prevalence of the error, even among accoucheurs of high standing.

While there can be no doubt as to the placenta being sometimes attached to the cervix uteri in early pregnancy, when it is obviously the cause of abortion,—a circumstance I have referred to elsewhere, when treating of abortion in the early months, when I reported an interesting case, in which the placenta was found attached to the cervix, and which was the obvious cause of abortion and violent hæmorrhage,—it is, however, very questionable if it is ever found attached to the cervix in advanced pregnancy, because, as it becomes developed, as gestation advances, it would act like a sponge-tent, which is the most effectual means of bringing on uterine action.

The question is, therefore, where is it that the placenta is attached in unavoidable hæmorrhage, and why is it that when so situated that hæmorrhage is inevitable? In such circumstances it is attached to the lower segment of the uterus, immediately within the internal os, which it may cover either partially or entirely, and its development goes on as when placed elsewhere *pari passu* with that of the uterus. During this process there seems to be a mutual correspondence between the two organs, hence there is seldom any hæmorrhage in the early months of pregnancy; but as it advances towards the full time the correspondence in some instances seems to be diminished, or it entirely ceases, while the uterus continues to expand, and consequently a detachment may take place, or the placenta may be so much put on the stretch that its vessels may be ruptured, giving rise to hæmorrhage,—a circumstance which will be more clearly explained when treating of the source of hæmorrhage. If, however, we examine the external surface of the placenta, we will discover how wisely and beautifully this accident is provided against, in ordinary circumstances, by its cotyledonous formation. It is important to observe that its cotyledons are each supplied by its individual class of vessels, forming, as it were, a miniature placenta,[1] and that they are so constructed as to admit of a certain degree of expansion without injury, by which means the placenta is enabled to adhere more closely to the walls of the uterus, and to accommodate itself to its altered form.

But if the placenta is liable to be put on the stretch, and in consequence its cotyledons readily separated when placed on the lower segment of the uterus, it may be asked, How does the same thing not take place when it is placed higher on the walls of the uterus when uterine action comes on? This is easily explained, as the uterine contractions affect it differently, according to its locality. When it is attached to the higher parts of the uterus, the contractions, acting in a perpendicular direction, have the effect of shortening the uterus, and consequently draws the cotyledons more closely together, on the same principle as pressure acts on a sponge; whereas, when the placenta is situated on the lower segment of the uterus, the effect of the contractions being to dilate,

[1] Levret, *op. cit*, p. 38.

the inevitable result will be to separate the cotyledons as labour advances; and hæmorrhage will follow, especially in central placenta prævia, when the fœtal head descends and presses against it, making it bulge downwards. This is more particularly likely to take place when it is deprived of the support of the cervix by its being dilated. This is illustrated in Dr Hunter's valuable plate of placenta prævia, in the description of which he says, this is "a view of the womb and vagina fully opened on the back part to show the situation of the child, and the lower part of the placenta at the inside of the mouth of the womb under the child's head, and detached from the womb, the occasion of fatal hæmorrhage."

That was evidently a case of central presentation of the placenta, which was apparently attached above the internal os; but, judging from the engraving, there is no indication of its having been attached to any part of the cervix. In order to satisfy myself on this point, however, I went to the Museum in the Glasgow University, for the purpose of examining the preparation, but I was much disappointed to find that it was not there; but I found another one which goes far to prove the correctness of the opinion I have prepared above, namely, that the placenta is not attached to the cervix in advanced pregnancy. It is a beautiful preparation, which represents nearly a complete central presentation; but the portion which crossed the internal os, although it bulges down into the cervix, gives no indication of having been attached to it. It is perfectly smooth and covered with a membrane which completely conceals the cotyledons, and giving the external surface the same appearance as the fœtal surface. The cervix which is dilated is also comparatively smooth, and there is not the slightest vestige of uterine vessels with open mouth, as there would have been had the placenta been torn from it. But there was at the posterior part of the placenta, as represented in the preparation, a ragged tuft hanging down, which may have been the immediate source of the fatal hæmorrhage,—thus verifying to a certain extent Sir James Simpson's opinion that the placenta is frequently the immediate source of hæmorrhage. That eminent accoucheur was mistaken, however, in supposing that in order to the placenta becoming the seat of hæmorrhage it was necessary that it should be detached, to a greater or less extent, from the uterus. He states, "When the placenta is partially separated from the uterus there are two surfaces left exposed by that separation, namely, a portion of the internal surface of the uterus, and a portion of the external surface of the placenta. According to the usual explanation, such as I have shown it to be, the hæmorrhage is supposed to proceed from the first of these exposed surfaces, namely, that of the uterus. On the contrary, I am assured of opinion that it chiefly, and in most instances entirely, proceeds from the other surface, namely, that of the placenta." This is not an original idea on his part, however, as he

seems to have borrowed it from his predecessors in his chair, as he says, "I feel convinced that the pathological opinion on this point advocated by the late Professor Hamilton is the correct explanation." After citing the opinions of Drs Davis, Dewees, and Ingleby in reference to the origin of the hæmorrhage from the exposed uterine surface in unavoidable and accidental flooding, Dr Hamilton observes:—"Many other authorities may be quoted to prove the common opinion upon the subject; and yet the author, from the earliest period of his professional life, has been anxious to show that hæmorrhage in these cases proceeds from the separated portion of the placenta more than from the ruptured uterine vessels." [1]

Dr Matthews Duncan seems fully to entertain this opinion, as he states, "For my part, relying partly on my own observation, I believe such hæmorrhage to occur most frequently from the placenta." [2] But, in explaining the fact, he inconsistently says the hæmorrhage is occasioned "by rupture of the utero-placental vessel at or above the internal os uteri;" or, "by rupture of a marginal utero-placental sinus within the area of the spontaneous primitive detachment when the placenta is inserted, not centrally or covering the internal os, but with a margin at or near the internal os." [3]

There is an obvious contradiction in this passage; for, if there is hæmorrhage from a sinus within the area of "spontaneous detachment," there must unquestionably be a separation of the placenta from the uterus to a greater or less extent; otherwise, the blood must find its way through the membranes where they join the placenta, which would be rather a difficult matter, when we consider their natural toughness and their firm adhesion to the edge of the placenta.

But there may be a partial detachment of the placenta during the natural development of the lower segment of the uterus to which the placenta adheres, proceeding either from a delicacy in the adhesion, or from an unusual resistance on the part of the cotyledons, which prevents their separating so as to allow of the placenta accommodating itself to the increasing size of the uterus. This usually first takes place about the sixth month, and it may recur from time to time, more especially at what should be a monthly period, until the full term of pregnancy, when the loss of blood may be rendered more profuse by the labour pains separating the placenta to a greater extent, and exposing the mouths of a greater number of uterine vessels.

In making these remarks, I am aware that I am opposing Dr Duncan's theory that the lower segment of the uterus, or hemisphere, as it is called, does not become developed until the end of pregnancy; and that even within a few weeks of the full term, he states that the internal os will admit little more than a bougie;

[1] *The Select Obstetrical Works of Sir James Simpson*, p. 219.
[2] *Mechanism of Natural and Morbid Parturition*, p. 306.
[3] *Op. cit.*, pp. 306, 307.

but this is totally at variance with my own observation, and with the opinion of the highest authorities on the development of the uterus, and particularly with Dr Hunter's splendid engraving of the gravid uterus—although quite in accordance with another of this eminent accoucheur's theories, namely, that the fœtus at the full period of pregnancy is so fitted to the uterine cavity, that it cannot change its position. He states that "as the fœtus approaches the full time, it becomes in size and form more and more adapted to the cavity in which it was contained; so that at last the containing cavity and the fœtus were, as a general rule, so fitted to one another, that any such extensive motion as was involved in the change from a breech to a head presentation was impossible."[1] These remarks were made in reference to a case of mine, in which I stated that the fœtus had obviously changed from a head to a breech presentation in the eighth month, in consequence of a sudden mental impression made on the mother, and that the fœtal head was retained in its high position, apparently, by the cord being twice round the neck.

From what I have stated, it is obvious that there are two distinct sources of hæmorrhage in placenta prævia, namely, the placenta itself and the uterus, and it would be an important point in practice could they be distinguished, as it might lead to more satisfactory treatment. This circumstance, however, will appear more clearly when considering the treatment; but in the meantime it will be interesting to investigate what is the most likely cause of the complication.

Cause.—Various opinions have been entertained on this subject. The older authors, as has been already stated, imagined that when the placenta was found at the lower part of the womb, that it had been displaced by some shock from its original attachment at the fundus; but the opinion which has been most generally entertained in the present day is, that the ovum is not impregnated until it has reached the lower segment of the collum,[2] which is a very likely circumstance, and therefore may be the most frequent cause; but other causes have been assigned, which are well worthy consideration. The one is clearly indicated in Sir Edward Home's interesting paper on the passage of the ovum from the ovarium to the uterus, in which it is stated that the ovum had passed directly into the womb, there having been no apparent decidua covering the entrance of the Fallopian tube, and the ovum was found "concealed among the long fibres of coagulable lymph near the cervix."[3] A similar case is reported by Dr Lee, who informs us "that in the body of a woman who had poisoned herself in the third month of pregnancy, he found both Fallopian tubes pervious, and the ovum being attached by the placenta to

[1] *Association Medical Journal*, 22d June 1853.

[2] Dr Read on *Placenta Prævia*, p. 37.

[3] *Philosophical Transactions of the Royal Society of London in* 1817, part i. p. 254.

the inferior segment of the uterus, it was obvious that it could not have pressed before it the decidua reflexa in the manner usually represented."[1]

This important fact received no particular attention until it was brought prominently forward by Dr Doherty, in his excellent paper read before the Dublin Obstetrical Society in 1845, in which he says, "The occurrence of full placental presentation, where that substance springs from the whole disk of the mouth of the womb, is, I believe, referable to deficiency in the decidua, which should naturally extend across the orifice of the Fallopian tubes, and the absence, consequently, of the support which ordinarily it is thus enabled to give to the ovum."[2] The frequency with which placenta prævia occurs in some women would lead us to infer that the deficiency of the decidual covering of the orifice of the Fallopian tubes is not always accidental, but may proceed from a natural defect in the uterus which renders it unfit to form decidua at that point.

While deficiency of the decidua may thus be considered a cause of placenta prævia, a like result may probably arise from preternatural delicacy of the decidua, by which it is rendered unable to support the ovum on its arrival in the uterus, or that its weakness induces it to yield easily to any severe shock occurring previous to the ovum being securely attached to the uterus, when it would naturally fall to the more dependent part of the uterus. But these speculations are more interesting in a physiological point of view than practically useful; because, whatever may be the cause of the complication, it cannot be prevented by any human means.

Treatment.—There has hitherto been a remarkable degree of empiricism in the treatment of placenta prævia, arising apparently from its alarming and dangerous character, which has induced some practitioners to endeavour to check the flooding without delay, even at the sacrifice of the child's life. Many remedies have in consequence been adopted, but the first in importance is the artificial delivery of the child by turning. This operation was first suggested by Ambrose Pare, and afterwards strongly advocated by Guillemeau, and it has been considered the most valuable remedy by the generality of the profession since his time, and it is certainly the most advisable when the os uteri is sufficiently dilated, or dilatable to admit of its being performed, more especially if the woman has stamina enough to undergo the operation, and there is an obvious tendency in the uterus to contract. Should there be no evidence of uterine energy, however, it will be necessary to have recourse to stimulants, and the ergot, given either by the mouth or by subcutaneous injection, in order to rouse the uterine energies if possible before attempting the operation. But some accoucheurs have objected to artificial delivery, from its being

[1] *Medico-Chirurgical Transactions*, vol. xviii. p. 493. London.
[2] *Dublin Journal of Medical Science*, vol. xxvii. p. 333.

liable to be followed by fatal eonsequenees. There is too much reason to believe, however, that these results are more frequently produced by its being injudieiously performed than its inherent charaeter. Nevertheless, the prejudice against it has led to two other operations being suggested as a substitute for it: the one by Sir James Simpson, the other by Dr Barnes. The operation suggested by Sir James Simpson is the entire separation of the plaeenta, which he so strenuously advoeated, that some practitioners, ignorant of the history of the subjeet, have supposed that he originated it; but he only revived it, as it was performed by Portal two hundred years ago, and the suceess attending his operations seems to have induced others more reeently to praetise it; the most eelebrated of whom, previous to Sir James Simpson, was Mr Kinderwood, who reports several eases, some of whieh were suceessful, so far as the mother was eoneerned; others were fatal to both mother and ehild. It is very questionable if the eases in which the mothers were saved would not have been equally suecessful had turning been adopted in plaee of entire separation of the placenta, when in all probability the ehild might have been saved.

The argument used by Sir James Simpson in support of this operation is in many instances quite untenable, as it goes on the ground that hæmorrhage "chiefly, and in most instances entirely proceeds from the other surfaee, namely, that of the plaeenta;" "or, perhaps, more properly speaking, of one large maternal vaseular bag, into whieh the blood of the mother is eonveyed by the utero-placental arteries,"[1] and by its removal the hæmorrhage would eease.

Upon this prineiple the placenta might be eompared to a reservoir supplied by many pipes, and from which, when injured, fluid might eseape; but, unless a check were put on the supplying vessels, its mere removal from its loeality would not prevent the drain upon the souree from which the fluid came; neither will the separation of the plaeenta cheek the hæmorrhage from the uterus, unless it has energy enough to contraet on its vessels, so as to prevent the eirculation through them after the placenta is detached. Therefore, if the patient is so exhausted that the uterus eannot act, this operation is equally hazardous to the mother as turning, while it is almost certainly fatal to the child.

Dr Radford, who seems to be favourable to this operation, says —"I conclude that on a complete separation of the placenta the hæmorrhage is immediately and completely suppressed, provided the uterus is in a condition so far to contraet as to foree down the head with the placenta upon the uterine openings."[2] This is a very erroneous idea, as a little observation will show that the fœtal head is ill adapted to act as a plug; and no internal pressure would have the effect of suppressing the hæmorrhage, which can only be overeome by the same action on the part of the

[1] *Op. cit.* p. 219.
[2] *Prov. Med. and Surg. Journ.*, 1845, quoted by Dr Barnes, p. 46.

uterus and its vessels previous to the birth of the child as takes place after delivery.

Dr Barnes, while he strongly objects to the entire separation of the placenta, advises another operation on the same principle, which has for its object the extension of the partial separation of the placenta, then leaving the ease to nature. Now, experience shows that the great cause of anxiety on the part of the accoucheur, and danger to the mother and child, is partial separation of the placenta, in some cases even to a limited extent; yet, this author considers that by this operation "the case is resolved into a natural labour." He founds this remarkable opinion on the supposition that "there is then an anatomical or physiological limit to the extent of placenta liable to detachment during the expansion of the womb;"[1] and that he has discovered that limit, and can discriminate it during labour, and he designates it the "cervical zone," "the region of dangerous attachment," and by separating the placenta from it hæmorrhage ceases. This is, however, a mere hypothesis, as there is no part of the uterus from which the placenta can be separated artificially without the danger of hæmorrhage, unless uterine contraction immediately takes place. Therefore this operation is equally, if not more, hazardous than the one recommended by Sir James Simpson.

The only tenable argument which has been used in favour of either of these operations is that they can be performed with less shock to the mother, and requires less manipulation, or manual violence as Barnes calls it, than artificial delivery. But this is a mistaken idea. For, in the first place, the os must be dilated to considerable extent before it is possible to introduce the finger sufficiently for the separation of the placenta; and, unless there is great tendency to detachment on the part of the placenta, a considerable degree of force will be required to effect it. This is verified in Dr Reid's case, formerly referred to, in which he could not force his finger into the anterior part of the uterus to which the placenta adhered; and every one must have experienced the difficulty of separating the placenta in hæmorrhage occurring after delivery of the child.

There are other remedies which have been deservedly appreciated in unavoidable hæmorrhage, namely, plugging and rupturing the membranes, both of which are most beneficial in the cases suitable for their employment.

Having referred to the most important remedies which have been employed in placenta prævia, it now remains to decide in what cases they are most likely to be useful; and this is the most difficult part the accoucheur has to perform, and his success will, in a great measure, depend on his forming a correct diagnosis. If the os uteri is small and rigid, this will be rendered a very difficult matter. Therefore our duty will be, in the first place, to have recourse to plugging, until this state of the os is overcome;

[1] *Op. cit.* p. 54.

and the best kind of plug is the indiarubber bag filled with air, which Dr Keiller had the merit of introducing into midwifery practice. This is infinitely superior to "Dr Barnes's bags," as they are called, which are filled with water. The bag filled with air not only affords a light and good support, but it enables the accoucheur to ascertain if the hæmorrhage is still going on, and it is easily applied; whereas, if a sponge or handkerchief is employed, it is introduced with difficulty, and the blood is prevented escaping, so that the accoucheur is kept in the dark as to the continuance of the hæmorrhage, unless the general condition of the patient enlightens him.

If the labour pains are active, it will be desirable to remove the plug to ascertain what progress has been made in the dilation of the os, and if it is sufficiently dilated, or easily dilatable to admit the hand, and the child has been ascertained to be alive, and the hæmorrhage profuse, there ought to be no delay in delivery by means of turning. But if the child is dead, and the mother much exhausted, it may become a question if the entire separation of the placenta may not be attempted, especially if there is a natural tendency to its being detached by the uterine contractions. If the os uteri is not sufficiently dilated to admit of either of these operations, and if the case is one of central presentation, the plug should be again employed, as it is probable that the hæmorrhage is caused by the placenta being put on the stretch by the pressure of the child's head, and the support afforded by the plug may have the effect of checking it until labour is further advanced. But if it is a partial presentation, and the distended membranes are found occupying the entire disk of the os, rupturing them may have the effect of checking the hæmorrhage, by allowing the uterus to contract on the vessels from which it was flowing, just in the same manner as takes place when they are ruptured in accidental hæmorrhage. In regard to Barnes's operation, I cannot imagine any case in which it would be justifiable.

Since the publication of the first part of this paper, my attention has been drawn to the passage at the foot of page 7, in reference to Dr Matthews Duncan's opinion regarding hæmorrhage in placenta prævia, and, in justice to that eminent accoucheur, I think it right to state that he there limited his remarks to hæmorrhage during pregnancy, and that in a subsequent passage he supports the fact that hæmorrhage is unavoidable during labour.[1]

[1] *Op. cit.*, p. 358.

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